

**PREHOSPITAL PEDIATRIC EQUIPMENT
FOR BLS/ALS SUPPORT UNITS**

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Prehospital Pediatric Equipment For BLS/ALS Support Units



PREHOSPITAL PEDIATRIC EQUIPMENT FOR BLS/ALS SUPPORT UNITS

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Introduction

Prehospital pediatric emergency care providers must have appropriate equipment and supplies to care for ill and injured infants and children. Guidelines for equipment and supplies for Basic Life Support (BLS) Units and Advanced Life Support (ALS) Units have been published by a number of organizations and agencies including: The American Heart Association, The American Academy of Pediatrics, The California Highway Patrol, and The Los Angeles Pediatric Society. In addition The American College of Emergency Physicians has published both a policy statement recommending that prehospital care providers have proper equipment for pediatric emergencies, and a pediatric ambulance equipment list.

This document was developed by the Prehospital Services Subcommittee of the California EMS Authority's EMSC Project to establish minimal guidelines for California prehospital providers. It identifies specific pediatric equipment and supplies to be carried by BLS and ALS units. These guidelines apply statewide to all transporting agencies, to all non-transporting ALS/Limited Advance Life Support (LALS) services and to all non-transporting agencies that operate at the EMT-1 level whose medical responses constitute greater than fifty percent of total emergency responses. For all first responders, services that the agency provides to adults should also be provided to children. Equipment for pediatric interfacility transport teams is covered in a separate document; "Guidelines for Pediatric Interfacility Transport Programs". The scope of practice of the prehospital providers in a specific agency will dictate how the guidelines are applied in a local or regional area. Fiscal and space factors may also determine how much equipment can be carried by rescue units.

Equipment and supplies are but one element in providing prehospital emergency care to infants and children. Providers must also receive appropriate pediatric education and have pediatric treatment protocols; two other documents from the EMSC Project provide specific guidelines for these elements. Moreover, on-going quality improvement activities and appropriate medical direction for EMSC within EMS systems should guide all prehospital care of children.

Research and evaluation of EMS systems will continue to provide information on the safety, cost, feasibility and efficacy of various treatment approaches. Also, technological advances in equipment



design will further enhance the ability of the prehospital providers to assess and manage the needs of infants and children. This document will thus have to be updated periodically to reflect changes in prehospital care.

PREHOSPITAL PEDIATRIC EQUIPMENT FOR BASIC LIFE SUPPORT UNITS

1. Oropharyngeal airways-infant, child
2. Bag valve resuscitator, child reservoir¹
3. Clear masks for resuscitator-infant, child, adult
4. Nasal cannulae, child and adult sizes
5. Oxygen masks-child, adult
6. Blood pressure cuffs-infant, child, adult
7. Backboard
8. Cervical immobilization device²
9. Extremity splints
10. Burn dressings³

¹Ventilation bags used for resuscitation should be self refilling without a pop-off valve. The child and adult bags are suitable for supporting adequate tidal volumes for the entire pediatric age range. A child bag is defined as one that has at least a 450 ml reservoir. An adult bag has at least a 1,000 ml reservoir.

²A cervical immobilization device should be a soft device that can immobilize the neck of an infant, child or adult. It may be towel rolls, or a commercially available specific neck cradling device. Cervical immobilization of a small infant can be achieved by use of towel rolls and tape rather than a cervical collar or sandbags. (Infants may need support under shoulders to relieve neutral spine position).

³Burn dressings may include commercially available packs and/or clean sheets and dressings.



11. Sterile scissors or equivalent umbilical cord cutting device⁴
12. Thermal blanket
13. Portable suction unit⁵
14. Suction catheters, infant, child, adult
15. Tonsil suction tip
16. Bulb syringe
17. Obstetric pack

PREHOSPITAL PEDIATRIC EQUIPMENT FOR ADVANCED LIFE SUPPORT UNITS

ALS units should have all the equipment listed on the BLS list plus the following additional items.

1. Monitor defibrillator¹
- * 2. Laryngoscope with straight blades 0-4 and curved blades 2,3,4
- * 3. Pediatric and adult size stylets for endotracheal tubes

⁴Sterile scissors or equivalent devices are for cutting the umbilical cord during childbirth and may be stocked separate from the obstetrical pack carried by the EMS provider, or carrier to assure sterility.

⁵This may include motorized suction device or hand-driven device.

¹All defibrillator should be able to deliver 5 to 400 Joules. The addition of pediatric paddles may give the responding unit enhanced capabilities, but may not be essential for units that rarely use this equipment. The defibrillator may be equipped with only adult paddles/pads or, pediatric paddles and adult paddles/pads. Units carrying only adult paddles/pads should insure that providers are trained in the proper use of adult paddles in infants and children. When defibrillator cannot deliver lower joules, shock at lowest possible energy level.



- * 4. A pediatric Magill forcep
- * 5. Endotracheal tubes uncuffed sizes 2.5-6.0 and cuffed 6.0-8.0
- 6. Arm boards infant, child
- 7. Intravenous catheters 14-24 gauge
- 8. Microdrip and macrodrip I.V. devices²
- * 9. Intraosseous needles
- 10. Drug dose chart or tape³

* These items are required only if the skill is part of the local scope of practice of the EMS providers.

²These may include burrettes, microdrip tubing, or in-line volume controllers.

³This may include charts giving the drug doses in mls or mgs/kg, precalculated doses based on weight, or a tape which generates the drug dose based on the length of the patient.



Prehospital Pediatric Equipment For BLS/ALS Support Units
Suggested Readings

1. ACEP Policy Statement, October 1991. *Minimum Pediatric Prehospital Equipment Guidelines*.
2. *California Highway Patrol Ambulance Drivers Handbook*, January 1991.
3. Seidel JS, Henderson DP (Eds) *Prehospital Care of Pediatric Emergencies*. Los Angeles Pediatric Society, California EMSC Project 1987.
4. Dieckmann RA: *Pediatric Emergency Care Systems: Planning and Management*, Williams and Wilkins, 1992.
5. American Heart Association Standards for CPR and Emergency Cardiac Care, February 1992.
6. Grossman MG, Dieckmann RA: *Pediatric Emergency Medicine: A Clinician's Reference*, J.B. Lippincott, 1991.

